

Session 2023-24

Lesson Plan

Govt. College, Nagina,

class - B.Sc (N.M.) IIIrd Year VIth Sem

Sub: - Mathematics (Real and Complex Analysis)

Name of Teacher: Manish Agni

Jan, 2024

Week 1: - Jacobian, Beta and Gamma functions.

Week 2: - Double and Triple integrals.

Week 3: - Dirichlet's integrals.

Week 4: - Change of order of integration in double integrals.

Feb, 2024

Week 1: - Fourier's series: Fourier expansion of piecewise monotonic functions.

Week 2: - Properties of Fourier coefficients, Dirichlet's conditions.

Week 3: - Parseval's identity for Fourier series, Fourier series for even and odd functions.

Week 4: - Half range series, change of intervals, Revision

March, 2024

Week 1: - Extended Complex Plane, stereographic projection of complex numbers.

Week 2: - Continuity and differentiability of complex functions.

Week 3:- Analytic functions, Cauchy-Riemann equations, Harmonic functions.

Week 4:- Revision.

April, 2024

Week 1:- Mappings by elementary functions: translation, rotation.

Week 2:- Magnification and Inversion, Conformal Mappings, Mobius transformations.

Week 3:- fixed points, cross ratio, Inverse Points and Critical mappings.

Week 4:- Revision.

Manish Agha

Manish Agha
(Ext. Lecturer in
Mathematics)

Session - 2023-24

Lesson Plan

Govt. College, Nagina.
Class B.Sc (N.M.) IIIrd Year VIth Sem
Sub: Mathematics (Linear Algebra)
Name of Teacher - Manish Agni

Jan., 2024

- 1 Week: - Vector spaces, subspaces, sum and direct sum of subspaces, linear span, linearly independent and dependent subsets of n vector space.
- 2 week: - finitely generated vector spaces, existence theorem, for basis of a finitely generated vector space.
- 3 week: - finite dimensional vector spaces, invariance of no. of elements of basis sets.
- 4 week: - Dimension, Quotient space and its dimension.

Feb., 2024

- Week 1: - Homomorphism and isomorphism of vector spaces, linear transformations and linear forms on vector spaces.
- Week 2: - Dual space, bidual space, annihilator of subspaces of finite dimensional vector space.
- Week 3: - Null space, range space of a linear transformation.

Week 4: - Rank and Nullity theorem
Revision

March, 2024

Week 1: - Algebra of linear transformation, minimal poly of a linear transformation.

Week 2: - Singular and non-singular linear transformation, matrix of a linear transformation.

Week 3: - Change of basis, eigen values and eigen vectors of linear transformation.

Week 4: - Revision.

April, 2024

Week 1: - Inner product spaces, Cauchy-Schwarz inequality, orthogonal vectors, orthogonal complements.

Week 2: - Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces.

Week 3: - Gram-Schmidt orthogonalization process, Adjoint of a linear transformation and its properties, unitary linear transformations.

Week 4: - Revision.

Navish Aglu

Navish Aglu
(Ext Lecturer in Math)

Session 2023-24

Lesson Plan

Govt. College, Nagina,
class - B. SC (N.M.) IIIrd Year VIIth sem.

Sub.: - Mathematics (Dynamics)

Name of Teacher - Manish Agni

Jan., 2024

Week 1: - Velocity and acceleration along radial, transverse directions

Week 2: - vel. and acc along tangential and normal directions.

Week 3: - Relative velocity and acceleration

Week 4: - simple harmonic motion, elastic strings

Feb., 2024

Week 1: - Mass, Momentum and force

Week 2: - Newton's law of motion, work

Week 3: - Power and energy.

Week 4: - Def. of conservative forces and impulsive forces, Revision.

March, 2024

Week 1: - Motion on smooth and rough plane curves.

Week 2: - Projectile motion of a particle in a plane

Week 3: - Vector angular velocity

Week 4: - Revision

April, 2024

Week 1: General motion of a rigid body =
Central orbits.

Week 2: Kepler's laws of motion, Motion of
a particle in three dimensions.

Week 3: ACC in terms of cliff coordinate
systems.

Week 4: Revision

Manish Agni

Manish Agni
(Text Lecturer in
Mathematics)